IN THE CLAIMS

Please amend the claims as follows:

1. – 7. (Cancelled)

8. (Previously Presented) A method of generating a high-level vacuum comprising:

evacuating a chamber having a substantially-pure gas therein;

freezing residual gas in the chamber to generate a high-level vacuum within the chamber;

purging impurities from the chamber with the gas by filling the chamber with the gas;

repeating the filling and the evacuating to reduce impurities from the chamber and to obtain a high concentration of the gas within the chamber; and

after filling the chamber with the gas, evacuating the chamber prior to freezing to generate a medium-level vacuum,

wherein the substantially-pure gas has in impurity-level of less than approximately 100 parts per million (PPM), and

wherein the gas is carbon-dioxide and has a freezing point of above approximately 100 degrees Kelvin at the medium-level vacuum.

9. (Currently Amended) The method of claim 8 ~~A method of generating a high-level vacuum comprising:~~

~~evacuating a chamber having a substantially-pure gas therein;~~

~~freezing residual gas in the chamber to generate a high-level vacuum within the chamber;~~

~~purging impurities from the chamber with the gas by filling the chamber with the gas;~~

~~repeating the filling and the evacuating to reduce impurities from the chamber and to obtain a high concentration of the gas within the chamber; and~~

~~after filling the chamber with the gas, evacuating the chamber prior to freezing to generate a medium-level vacuum,~~

wherein the chamber comprises a magnet chamber ~~having a magnet therein~~, and wherein freezing comprises reducing the temperature within the chamber by cooling the magnet ~~to at or below a freezing point of the gas at the medium-level vacuum~~.

10. (Original) The method of claim 9 further comprising after freezing the gas, further cooling the magnet to a cryogenic temperature,

wherein the vacuum within the chamber is to provide insulation for the cryogenically-cooled magnet.

11. – 19. (Cancelled)

20. (Previously Presented) A vacuum insulation system comprising:

a chamber having a substantially-pure gas therein at less than atmospheric pressure;

a cooling element to freeze residual gas in the chamber to generate a high-level vacuum within the chamber; and

a gas cylinder having the substantially-pure gas therein at a higher-than atmospheric pressure, the gas cylinder to at least slightly pressurize the chamber with the gas prior to the vacuum pump evacuating the chamber before freezing,

wherein the substantially-pure gas has an impurity-level of less than approximately 100 parts per million (PPM), and

wherein the gas is carbon-dioxide and has a freezing point of above approximately 100 degrees Kelvin at the medium-level vacuum.

21. (Currently Amended) The system of claim 20 ~~14~~ further comprising a magnet within the chamber, and wherein the cooling element is to reduce a temperature within the chamber by cooling the magnet to at or below a freezing point of the gas at the medium-level vacuum.

22. (Original) The system of claim 21 wherein after freezing the gas, the cooling element is to further cool the magnet to a cryogenic temperature, and wherein the high-level vacuum within the chamber is to provide insulation for the cryogenically-cooled magnet.

23. – 25. (Cancelled)

26. (Previously Presented) The system of claim 21 wherein the magnet is an electromagnet cooled to a superconducting temperature to generate a high-level magnetic field for a radar tube in a radar system.

27. (Currently Amended) A vacuum insulation system comprising:

a chamber having a substantially-pure gas therein at less than atmospheric pressure; and

a cooling element to freeze residual gas in the chamber to generate a high-level vacuum within the chamber, the chamber having essentially no other gasses therein other than the substantially-pure gas;

a medium-level vacuum pump to reduce the pressure within the chamber to a medium-level vacuum before the cooling element operates to freeze the gas; and

a magnet within the chamber,

wherein the cooling element is to reduce a temperature within the chamber by cooling the magnet to at or below a freezing point of the gas at the medium-level vacuum, and

~~The system of claim 21~~ wherein the magnet is a superconducting magnet in a magnetic-resonance-interference (MRI) diagnostic imaging system.

28. (Cancelled)

29. (Previously Presented) A vacuum insulation system comprising:

a chamber having a substantially-pure gas therein at less than atmospheric pressure; and

a cooling element to freeze residual gas in the chamber to generate a high-level vacuum within the chamber,

wherein the chamber is to insulate an infrared seeker head of a missile, the chamber being provided with the substantially-pure gas therein,

wherein the system further comprises a cooling liquid to freeze the substantially-pure gas within the chamber after launch of the missile to generate in flight the high-level vacuum within the chamber, the cooling liquid to further cool the seeker head to at least a near-cryogenic temperature, and

wherein the cooling liquid comprises liquid argon, and wherein the substantially-pure gas is carbon-dioxide, and wherein the chamber is initially provided with the medium-level vacuum.